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LETTER TO THE EDITOR

Response to "Increased risks of upper tract urothelial carcinoma in male and female Chinese herbalists"

Dear Editor,

The incidence of upper urinary tract urothelial carcinoma (UUC) in Taiwan is extremely high.[1] In addition to arsenic contamination in Southwestern Taiwan, aristolochic acid, a component of traditional Chinese herbs, has been proven to be involved in the development of urothelial cancers. This has been shown by aristolactam—DNA adducts in the renal cortex, and aristolochic-acid-related signature mutations, A:T to T:A transversions, throughout the whole genome of patients with cancer.[1] Yang et al initially reported increased risks of UUC in Chinese herbalists compared to the general population of Taiwan.[2] They confirmed the fact that Chinese herbalists exposed to fangji, a well-known aristolochic-acid-containing herb, have a higher risk of urothelial carcinoma compared to controls.[3] Patients with aristolochic-acid-induced UUC were relatively younger than those with non-aristolochic-acid-induced UUC in a Taiwanese cohort.[4] Herbalists exposed to fangji developed UUC significantly earlier than the non-herbalist population did,[3,4] which led to the possible association between level of aristolochic acid exposure and development of UUC. Therefore, occupational exposure of aristolochic acid makes Chinese herbalists candidates for UUC, who might need active surveillance including urinalysis and urinary tract imaging studies during their lifetime. Furthermore, aristolochic-acid-induced UUC patients are prone to develop contralateral UUC recurrence.[4] Hence, regular follow-up for UUC patients is mandatory for early diagnosis and curative treatment. To date, we still did not know the latent period from aristolochic acid exposure to the development of UUC. One hint might be the trend in incidence of UUC after the ban of aristolochic acid in 2003 in Taiwan. The incidence of UUC rapidly increased from 1990 and finally reached a plateau after 2003.[1] Confirmation of the decreasing trend in incidence in the future would be an important cornerstone to calculate the latent period of UUC in Taiwan.

References

1. Chen CH, Dickman KG, Moriya M, Zavadil J, Sidorenko VS, Edwards KL, et al. Aristolochic acid-associated urothelial cancer in Taiwan. *Proc Natl Acad Sci U S A* 2012;**109**:8241—6.
2. Yang HY, Wang JD, Lo TC, Chen PC. Increased risks of upper tract urothelial carcinoma in male and female Chinese herbalists. *J Formos Med Assoc* 2011;**110**:161—8.
3. Yang HY, Wang JD, Lo TC, Chen PC. Occupational exposure to herbs containing aristolochic acids increases the risk of urothelial carcinoma in Chinese herbalists. *J Urol* 2013;**189**:48—52.
4. Chen CH, Dickman KG, Huang CY, Moriya M, Shun CT, Tai HC, et al. Aristolochic acid-induced upper tract urothelial carcinoma in Taiwan: clinical characteristics and outcomes. *Int J Cancer* 2013;**133**:14—20.

Yann-Rong Su
Chung-Hsin Chen*
Department of Urology, National Taiwan University Hospital, Yun-Lin Branch, Yun-Lin, Taiwan

*Corresponding author. Department of Urology, National Taiwan University Hospital, 7, Chung-Shan South Road, Taipei 100, Taiwan.
E-mail address: duoncin.dan@gmail.com (C.-H. Chen)

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